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09/529,773	06/30/2000	Anil K. Agarwal	A7046	3512

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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/529,773	AGARWAL ET AL.	
	Examiner	Art Unit	
	RAYMOND S. DEAN	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 24, 2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 5, 10, 14 have been considered but are moot in view of the new ground(s) of rejection.

Vannatta et al. (5,999,832), which, like Strodtbeck, is in the field of endeavor of controlling the transmission power from a user terminal, teaches messages including data indicative of a power level among N power levels (Col. 4 lines 34 – 40). Strodtbeck, as detailed in and for the same reasons set forth in the previous Office Action dated November 2, 2007, teaches generating bit error rate (BER) messages indicative of measured BER for a signal transmitted at N power levels. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BER messages of Strodtbeck with power level data of Vannatta for the purpose providing power levels that are compatible with the power source of the

terminal thus enabling sufficient power levels regardless of the power source of the terminal as taught by Vannatta.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 23 recites the limitation "**the** increasing the power level" in lines 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1 – 2, 5, 8 – 9, 19, 21 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strodtbeck et al. (5,864,547) in view of Washburn et al. (4,999,583) and in further view of Vannatta et al. (5,999,832)

Regarding Claim 1, Strodtbeck teaches a distributed network under the control of a computer (Figure 1, Col. 3 lines 44 – 48, typical satellite systems comprise network control centers (NCCs), which comprise at least one computer), the network having a first terminal including the amplifier, the first terminal being operatively coupled to a

plurality of second terminals by a communication channel (Figure 1, Col. 3 lines 44 – 48, 4 lines 45 – 47, the VSATs can communicate with one another), said method comprising: generating bit error rate (BER) messages indicative of measured BER for a signal transmitted at N power levels (Cols. 5 lines 10 – 60, 6 lines 17 – 47, the uplink power can be a plurality of power levels, byte errors comprise bit errors), (Cols. 5 lines 10 – 60, 6 lines 17 – 47, the error rates are an indication of the power level, for example- an improved bit error rate is an indication that the power is higher); reducing the maximum allowed power of the amplifier responsive to the BER messages (Cols. 5 lines 10 – 60, 6 lines 17 – 47).

Strodtbeck does not teach reducing the maximum allowed power of the amplifier when it is determined that the amplifier is approaching saturation responsive to the generated BER messages and a method for dynamically determining the power compression point of an amplifier, each of said BER messages including data indicative of a power level among the N power levels corresponding to the measured BER in each of said BER messages, at the second terminals.

Washburn teaches reducing the maximum allowed power of the amplifier when it is determined that the amplifier is approaching saturation and a method for dynamically determining the power compression point of an amplifier (Col. 2 lines 53 – 68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the amplifier of Strodtbeck with the amplifier control circuitry of Washburn for the purpose of enabling the amplifier remain below its maximum safe operating level as taught by Washburn.

Vannatta, which, like Strodtbeck, is in the field of endeavor of controlling the transmission power from a user terminal, teaches messages including data indicative of a power level among N power levels corresponding to a measured link quality (Col. 4 lines 34 – 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BER messages of Strodtbeck in view of Washburn with power level data of Vannatta for the purpose providing power levels that are compatible with the power source of the terminal thus enabling sufficient power levels regardless of the power source of the terminal as taught by Vannatta.

Regarding Claim 5, Strodtbeck teaches a distributed network under the control of a computer (Figure 1, Col. 3 lines 44 – 48, typical satellite systems comprise network control centers (NCCs), which comprise at least one computer), the network having a first terminal including the amplifier, the terminal being operatively coupled to a plurality of second terminals by a communication channel (Figure 1, Col. 3 lines 44 – 48, 4 lines 45 – 47, the VSATs can communicate with one another), said method comprising: transmitting a signal transmitted at N power levels to the second terminals, where N is a positive integer (Cols. 5 lines 10 – 60, 6 lines 17 – 47, the uplink power can be a plurality of power levels); measuring a bit error rate (BER) for the signal at each of said N power levels at the second terminals (Cols. 5 lines 10 – 60, 6 lines 17 – 47); generating BER messages for the signal at each of said N power levels, transmitting the BER messages to the computer (Cols. 5 lines 10 – 60, the data, which comprises the error measurements, is re-formatted and transmitted); and reducing the maximum

allowed power of the amplifier responsive to the BER messages (Cols. 5 lines 10 – 60, 6 lines 17 – 47).

Strodtbeck does not teach reducing the maximum allowed power of the amplifier when it is determined that the amplifier is approaching saturation responsive to the BER messages and a method for dynamically determining the power compression point of an amplifier, each of said BER messages including the measured BER and a tag indicative of a power level among said N power levels corresponding to the measured BER in each of said BER messages.

Washburn teaches reducing the maximum allowed power of the amplifier when it is determined that the amplifier is approaching saturation and a method for dynamically determining the power compression point of an amplifier (Col. 2 lines 53 – 68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the amplifier of Strodtbeck with the amplifier control circuitry of Washburn for the purpose of enabling the amplifier remain below its maximum safe operating level as taught by Washburn.

Vannatta, which, like Strodtbeck, is in the field of endeavor of controlling the transmission power from a user terminal, teaches messages including data indicative of a power level among N power levels corresponding to a measured link quality (Col. 4 lines 34 – 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BER messages of Strodtbeck in view of Washburn with power level data of Vannatta for the purpose providing power levels that are

compatible with the power source of the terminal thus enabling sufficient power levels regardless of the power source of the terminal as taught by Vannatta.

Regarding Claims 2, 8, Strodtbeck in view of Washburn and in further view of Vannatta teaches all of the claimed limitations recited in Claims 1, 5. Strodtbeck further teaches wherein N is an integer greater than 2 (Cols. 5 lines 10 – 60, 6 lines 17 – 47, the uplink power can be a plurality of power levels, which comprises a numbers greater than 2), and wherein said reducing the maximum allowed power comprises: determining an average BER responsive to said generated BER messages (Col. 6 lines 30 – 47, the number of errors is averaged); determining a BER slope responsive to said determined average BER (Figure 4, Col. 6 lines 30 – 47); and reducing the maximum allowed power when the BER slope is indicative of lower slope at higher power levels (Figure 4, Col. 6 lines 30 – 47, region 104 of plot represents the lower slope).

Regarding Claim 9, Strodtbeck in view of Washburn and in further view of Vannatta teaches all of the claimed limitations recited in Claim 5. Strodtbeck further teaches determining an average BER responsive to said generated BER messages (Col. 5 lines 10 – 60, the number of errors is averaged); determining a BER slope responsive to said determined average BER (Figure 4, Col. 6 lines 30 – 47); and evaluating the BER slope with respect to a reference power-BER data stored in the computer (Figure 4, Cols. 5 lines 57 – 60, 6 lines 30 – 47, the look-up table provides the storage, .00125,.0225 is the reference BER); and reducing the maximum allowed power when the determined BER slope and said reference power-BER data diverge to thereby

indicate a lower slope at higher power levels (Figure 4, Col. 6 lines 30 – 47, region 104 of plot represents the divergence).

Regarding Claim 19, Strodtbeck in view of Washburn and in further view of Vannatta teaches all of the claimed limitations recited in Claim 5. Strodtbeck further teaches wherein the transmitting the signal at the N power levels further comprises: transmitting a first plurality of signals at a high power level H; transmitting a second plurality of signals at a medium power level M; and transmitting a third plurality of signals at a low power level L (Col. 6 lines 38 – 47, Strodtbeck teaches that there is a direct relationship between the BER and the power level thus when the power level changes there will be a corresponding change in the BER, Since the BERs change there are a plurality of BERs and thus a corresponding plurality of power levels).

Regarding Claims 21, 22, Strodtbeck in view of Washburn and in further view of Vannatta teaches all of the claimed limitations recited in Claims 1, 5. Washburn further teaches wherein a signal is transmitted at N power levels prior to the reducing the maximum allowed power to the amplifier (Col. 2 lines 53 – 68, the RF power control circuit enables the adjustment of the maximum allowed power to the amplifier, a signal at a plurality of power levels can transmitted via the amplifier thus rendering a scenario wherein a plurality power levels are transmitted prior to the RF power control circuit conducting the adjusting).

7. Claims 3 – 4, 6 – 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strodtbeck et al. (5,864,547) in view of Washburn et al. (4,999,583) in view of

Vannatta et al. (5,999,832), as applied to Claim 1 above, and further in view of Ichiyoshi (5,991,280).

Regarding Claim 3, Strodtbeck in view of Washburn and in further view of Vannatta teaches all of the claimed limitations recited in Claim 1. Strodtbeck in view of Washburn and in further view of Vannatta does not teach wherein the signal is a control burst.

Ichiyoshi teaches wherein the signal is a control burst (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Strodtbeck in view of Washburn and in further view of Vannatta with the control burst of Ichiyoshi for the purpose of synchronizing the VSATs without depending on a GPS system as taught by Ichiyoshi.

Regarding Claims 4, 7, Strodtbeck in view of Washburn in view of Vannatta and further in view of Ichiyoshi teaches all of the claimed limitations recited in Claims 3, 6. Washburn further teaches the control burst in N sequential frames, wherein N is an integer greater than or equal to 2 (Abstract, in a TDMA system typical control bursts are greater than 2 frames).

Regarding Claim 6, Strodtbeck in view of Washburn and in further view of Vannatta teaches all of the claimed limitations recited in Claim 5. Strodtbeck further teaches wherein the communication channel comprises a satellite (Figure 1, Col. 3 lines 44 – 48).

Strodtbeck in view of Washburn and in further view of Vannatta does not teach wherein the signal is a control burst.

Ichiyoshi teaches wherein the signal is a control burst (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Strodtbeck in view of Washburn and in further view of Vannatta with the control burst of Ichiyoshi for the purpose of synchronizing the VSATs without depending on a GPS system as taught by Ichiyoshi.

8. Claims 10 – 18, 23 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strodtbeck et al. (5,864,547) in view of Ichiyoshi (5,991,280) and in further view of Vannatta et al. (5,999,832)

Regarding Claim 10, Strodtbeck teaches a method for dynamic uplink power control for an amplifier in a distributed network under the control of a computer (Figure 1, Col. 3 lines 44 – 48, 4 lines 45 – 47, typical satellite systems comprise network control centers (NCCs), which comprise at least one computer), the network having a first terminal being operatively coupled to a plurality of second terminals by a communication channel (Figure 1, Col. 3 lines 44 – 48, 4 lines 45 – 47, the VSATs can communicate with one another), said method comprising: examining a plurality of bit error rate measurement reports, respectively corresponding to a signal transmitted at N power levels (Col. 5 lines 10 – 60, 6 lines 17 – 47, the uplink power can be a plurality of power levels); computing an average BER responsive to said examined plurality of the BER measurement reports (Col. 5 lines 10 – 60, the number of errors is averaged); when said computed average BER is greater than said predetermined BER threshold, increasing a power level of the amplifier (Figure 4, Col. 6 lines 30 – 47, region 106); and

when said computed average BER is less than a predetermined BER threshold, decreasing the power level of amplifier (Figure 4, Col. 6 lines 30 – 47, region 104).

Strodtbeck does not teach a control burst and each of said CB BER measurement reports including data indicative of a power level among the N power levels to which it corresponds.

Ichiyoshi teaches wherein the signal is a control burst (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Strodtbeck with the control burst of Ichiyoshi for the purpose of synchronizing the VSATs without depending on a GPS system as taught by Ichiyoshi.

Vannatta teaches messages including data indicative of a power level among the N power levels to which it corresponds (Col. 4 lines 34 – 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BER messages of Strodtbeck in view of Ichiyoshi with power level data of Vannatta for the purpose providing power levels that are compatible with the power source of the terminal thus enabling sufficient power levels regardless of the power source of the terminal as taught by Vannatta.

Regarding Claim 14, Strodtbeck teaches a method for dynamic uplink power control for an amplifier in a distributed network under the control of a computer (Figure 1, Col. 3 lines 44 – 48, 4 lines 45 – 47, typical satellite systems comprise network control centers (NCCs), which comprise at least one computer), the network having a first terminal including the amplifier, the first terminal being operatively coupled to a

plurality of second terminals by a communication channel (Figure 1, Col. 3 lines 44 – 48, 4 lines 45 – 47, the VSATs can communicate with one another), said method comprising: examining a plurality of bit error rate measurement reports respectively corresponding to a signal transmitted at N power levels (Col. 5 lines 10 – 60); computing an average BER responsive to said examined plurality of the BER measurement reports (Col. 5 lines 10 – 60, the number of errors is averaged); comparing said computed average BER with a predetermined BER threshold (Figure 4, Col. 6 lines 30 – 47, region 106); when said computed average BER is greater than said predetermined BER threshold, increasing a power level of the amplifier (Figure 4, Col. 6 lines 30 – 47, region 106); and when said average BER is less than said predetermined BER threshold, decreasing the power level of amplifier (Figure 4, Col. 6 lines 30 – 47, region 104).

Strodtbeck does not teach a control burst and each of said CB BER measurement reports including data indicative of a power level among the N power levels to which it corresponds.

Ichiyoshi teaches wherein the signal is a control burst (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Strodtbeck with the control burst of Ichiyoshi for the purpose of synchronizing the VSATs without depending on a GPS system as taught by Ichiyoshi.

Vannatta teaches messages including data indicative of a power level among the N power levels to which it corresponds (Col. 4 lines 34 – 40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BER messages of Strodtbeck in view of Ichiyoshi with power level data of Vannatta for the purpose providing power levels that are compatible with the power source of the terminal thus enabling sufficient power levels regardless of the power source of the terminal as taught by Vannatta.

Regarding Claims 11, 15, Strodtbeck in view of Ichiyoshi and in further view of Vannatta teaches all of the claimed limitations recited in Claims 10, 14. Strodtbeck further teaches determining whether the power level of the amplifier is greater than a predetermined maximum power level; and when it is determined that the power level is greater than said predetermined maximum power level, varying at least one characteristic of a signal carried by the communications channel so as to reduce the BER (Col. 6 lines 30 – 47, an improved BER corresponds to a change in the transmit power).

Regarding Claims 12, 16, Strodtbeck in view of Ichiyoshi and in further view of Vannatta teaches all of the claimed limitations recited in Claims 10, 14. Strodtbeck further teaches determining whether the power level of the amplifier is greater than a predetermined maximum power level; and when the power level is greater than said predetermined maximum power level, establishing binary phase shift keying (BPSK) as a signal modulation technique to modulate the signal transmitted at the N power levels (Col. 5 lines 3 – 8, when the power level is greater than or less than the predetermined maximum power level BPSK used or QPSK is used); and when the power level is less than said predetermined maximum power level, establishing quadrature phase shift

keying (QPSK) as the signal modulation technique to modulate the signal transmitted at the N power levels (Col. 5 lines 3 – 8, when the power level is greater than or less than the predetermined maximum power level BPSK used or QPSK is used).

Regarding Claims 13, 17, Strodtbeck in view of Ichiyoshi and in further view of Vannatta teaches all of the claimed limitations recited in Claim 12, 16. Strodtbeck further teaches wherein said determining step is performed following said increasing the power level of the amplifier (Col. 4 lines 45 – 49, the UPLC is adaptive to mitigate the effect of interference and rain fade thus there will be a constant determining after the increasing thus enabling the power to be constantly adjusted).

Regarding Claim 18, Strodtbeck in view of Ichiyoshi and in further view of Vannatta teaches all of the claimed limitations recited in Claim 14. Strodtbeck further teaches determining up and down power values U and D, respectively, based on the computed average BER and a target BER; and wherein said increasing the power level comprises increasing power level of the amplifier by U dB (Figure 4, Cols. 4 lines 45 – 49, 6 lines 30 – 47); said decreasing the power level comprises decreasing the power level of the amplifier by D dB (Figure 4, Cols. 4 lines 45 – 49, 6 lines 30 – 47); and U and D are real numbers stored in a database of the computer (Figure 4, Col. 5 lines 57 – 60, look-up table is the database).

Regarding Claims 23, 24, Strodtbeck in view of Ichiyoshi and in further view of Vannatta teaches all of the claimed limitations recited in Claims 10, 14. Strodtbeck further teaches wherein the signal is transmitted at the N power levels prior to at least

the increasing/decreasing the power level of the amplifier (Figure 4, Col. 6 lines 30 – 47, regions 104, 106).

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strodtbeck et al. (5,864,547) in view of Washburn et al. (4,999,583) in view Vannatta et al. (5,999,832), as applied to Claim 19 above, and further in view of Fleming et al. (US 6,212,360)

Regarding Claim 20, Strodtbeck in view of Washburn and in further view of Vannatta teaches all of the claimed limitations recited in Claim 19. Strodtbeck in view of Washburn and in further view of Vannatta does not teach wherein H = P1 -h (dB), M = P1 - m (dB), and L = P 1 - l (dB), wherein P1 is a 1 dB compression of the amplifier, h = 1 dB, m = 2 dB; and l = 3 dB, and wherein the maximum allowed power of the amplifier is H.

Fleming teaches wherein H = P1 -h (dB), M = P1 - m (dB), and L = P 1 - l (dB), wherein P1 is a 1 dB compression of the amplifier, h = 1 dB, m = 2 dB; and l = 3 dB, and wherein the maximum allowed power of the amplifier is H (Cols. 8 lines 61 – 67, 9 lines 1 – 7, 9 lines 13 – 24, the power is adjusted to a plurality of levels thus the power level can be adjusted in the above increments).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Strodtbeck in view of Washburn and in

further view of Vannatta with the power control method of Fleming for the purpose of achieving good Eb/No margins as taught by Fleming.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND S. DEAN whose telephone number is (571)272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raymond S Dean/
Primary Examiner, Art Unit 2618

Raymond S. Dean
March 31, 2008